



PRACTICE ABSTRACT

Digitalisation: Needs and Impacts

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SOCIO-CYBER-PHYSICAL SYSTEM OF THE LAKE OF CONSTANCE, GERMANY

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The focal question researched by the Lake Constance Living Lab is: How can digitalisation contribute to the sustainability of fruit production in the Lake of Constance region? Digitalisation in this sector is not widely implemented, but stakeholder groups along the value chain have high expectations for digital solutions and appreciate the potential that these tools can bring into the sector. A large variety of socio-economic and environmental challenges are facing the fruit production sector in the Lake Constance region and have become more prominent during recent years. Regulations regarding pesticide reduction, the need for increased biodiversity, changing consumer behaviours, increasing weather extremes because of climate change, and a dependence on foreign seasonal workers challenge the sustainability of fruit production. Current

activities between entities in the SCP are automated field and orchard work, automated or partially-automated produce sorting and packing, controlled optimisation of controlled atmosphere (CA) storage of fruit, digital communication between farmers and along the value chain to the end consumer, and digital marketing systems such as organic produce boxes and on-farm store finders via smartphone apps. Overall, stakeholders perceive digitalisation to have a positive impact in fruit production, particularly in the environmental sustainability of fruit farming systems. 83% of stakeholders believe the energy efficiency of fruit farming can be increased, 75 % believe agricultural input efficiency can be improved, and 67 % believe greenhouse gas emissions can be reduced through digitalisation. However, these potential impacts are directly connected to the conditions of access: if access in terms of digital infrastructure, digital knowledge and skills, costs, and data security are not ensured at equal levels throughout the region, the positive impacts cannot be reached or evenly distributed across all stakeholder groups and demographics.

Living Lab

Lake of Constance, Germany

Key Digital Technologies

Farm management information systems, automated orchard machinery, consumer-producer communication apps

Keywords

Digitalised fruit production, environmental sustainability, consumer behaviour, conditions of access

More info: <https://desira2020.eu/lake-constance-germany/>



